

1 CLAIMS - I claim

2 1. A semiconductor workpiece support for use in processing a
3 semiconductor workpiece, comprising:

4 a processing head mounted for controlled motion to allow the
5 processing head to be mated with a processing bowl to confine a
6 processing chamber therebetween;

7 a rotor mounted for controlled rotation upon the processing head,
8 said rotor having a front face which is exposed to the processing
9 chamber and a back face opposite to said front face;

10 a workpiece holder for holding the semiconductor workpiece in
11 juxtaposition to the front face of the rotor;

12 a beam emitter for emitting an emitted optical beam from a
13 location behind the back face of the rotor;

14 a beam detector for detecting any reflected optical beam which
15 results from said emitted optical beam if said emitted optical beam is
16 reflected from a workpiece held by the workpiece holder.

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18 2. The semiconductor workpiece support of claim 1 wherein
19 said detector can operate in a mode which discriminates on the angle
20 of any reflected optical beam.

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22 3. The semiconductor workpiece support of claim 1 wherein
23 said beam detector is defined to include at least a pair of detectors.
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1 4. The semiconductor workpiece support of claim 1 and further
2 comprising at least one window provided in the rotor to improve
3 transmission of the emitted or reflected beams.

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5 5. A semiconductor workpiece support for use in processing a
6 semiconductor workpiece, comprising:

7 a processing head;

8 a rotor mounted for controlled rotation upon the processing head,
9 said rotor having a front face which is exposed to a processing chamber
10 and a back face opposite to said front face;

11 a workpiece holder for holding the semiconductor workpiece in
12 juxtaposition to the front face of the rotor;

13 a beam emitter for emitting an emitted optical beam from a
14 location behind the back face of the rotor;

15 a beam detector for detecting any reflected optical beam which
16 results from said emitted optical beam if said emitted optical beam is
17 reflected from a workpiece held by the workpiece holder.

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19 6. The semiconductor workpiece support of claim 5 wherein
20 said detector can operate in a mode which discriminates on the angle
21 of any reflected optical beam.

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23 7. The semiconductor workpiece support of claim 5 wherein
24 said beam detector is defined to include at least a pair of detectors.

1 8. The semiconductor workpiece support of claim 5 and further
2 comprising at least one window provided in the rotor to improve
3 transmission of the emitted or reflected beams.

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5 9. A semiconductor workpiece support for use in processing a
6 semiconductor workpiece, comprising:

7 a processing head;

8 a workpiece holder for holding the semiconductor workpiece in
9 juxtaposition to a workpiece holder panel;

10 a beam emitter for emitting an emitted optical beam from a
11 location behind the workpiece holder panel, said emitted optical beam
12 passing through said workpiece holder panel;

13 a beam detector for detecting any reflected optical beam which
14 results from said emitted optical beam if said emitted optical beam is
15 reflected from a workpiece held by the workpiece holder.

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17 10. The semiconductor workpiece support of claim 9 wherein
18 said detector can operate in a mode which discriminates on the angle
19 of any reflected optical beam.

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21 11. The semiconductor workpiece support of claim 9 wherein
22 said beam detector is defined to include at least a pair of detectors.
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12. The semiconductor workpiece support of claim 9 and further comprising at least one window provided in the workpiece holder panel.

13. A method for detecting a semiconductor workpiece held by a workpiece holder forming part of a rotor which is rotatably mounted on a processing head mounted for controlled motion to allow the processing head to be mated with a processing bowl to confine a processing chamber therebetween, comprising:

positioning the rotor at a suitable location relative to a beam emitter and beam detector;

emitting an emitted optical beam from the beam emitter through a rotor panel and against any workpiece being held by the workpiece holder;

detecting to determine whether there is reflected optical beam which indicates that a workpiece is held in the workpiece holder.

14. A method according to claim 13 and further defined by emitting the emitted optical beam through a window forming part of the rotor.

15. A method according to claim 13 and further defined by discriminating in said detecting step to detect a reflected beam which is incident upon at least one detector at an angle associated with reflection from any workpiece present.

16. A method according to claim 13 and further defined by discriminating in said detecting step to detect a reflected beam which is incident upon at least one detector at an angle associated with reflection from any workpiece present, and minimizing detection of any beam reflected from surfaces of said rotor.

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